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Deformation of Late Quaternary fluvial terraces in the Sochi region, Western Caucasus

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New data on modern folded deformations of the Western Caucasus were obtained. Ridges Achishkho (axial zone of the mountain system), Vorontsovsky and Galitsinsky (zone of the southern macroslope) are uplifting in the main Caucasus (SW-NE) direction. The first and the second Late Pleistocene river terraces found on the structural slope of the Galitsinsky anticlinal ridge are higher than in the adjacent synclinal Akhshtyr depression by 50-55 m and 80-85 m correspondingly. We have described a similar situation in the hanging wall of the Vorontsovsky thrust fault: Late and Early Karangat terraces of river Sochi have been deformed by ca. 25 and 50 meters correspondingly. The age of the terraces was defined by data of V. Shchelinsky (2007) and by our correlation with two marine Black Sea Karangat terraces (40-50 and 125-90 ka correspondingly, J. Izmailov, 2007). We can estimate relative uplift for the Galitsinsky Ridge as about 1 mm per year and for the Vorontsovsky Ridge as 0,5-0,6 mm per year. Achishkho ridge in the axial zone of the Western Caucasus is formed in the core of the syncline. In this structure modern contraction and squeezing of ductile Middle Jurassic shales from the core of the fold under compression of the limbs exceeds rate of denudation (in particular, active erosion and landslides in the shale zone of the Achishkho fold). Southern macroslope of the Western Caucasus demonstrates the active formation of folded relief of the anticlinal ridges and synclinal depressions, while the axial zone demonstrates the next stage of evolution of folded structures, when folded uplifting of the synclinal ridges exceeds rate of denudation. The active uplift of the folded structures of the main Caucasus direction indicates domination of modern lateral contraction with SW-NE direction.